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URANIUM AND GEOLOGY¹

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INTRODUCTION

IN our day but little time elapses between the discovery and its application. Our starting-point is as recent as the year 1903, when Paul Curie and Labord showed experimentally that radium steadily maintains its temperature above its surroundings. As in the case of many other momentous discoveries, prediction and even calculation had preceded it. Rutherford and McClung, two years before the date of the experiment, had calculated the heat equivalent of the ionization effected by uranium, radium and thorium. Even at this date (1903) there was much to go upon, and ideas as to the cosmic influence of radio-activity were not slow in spreading.²

I am sure that but few among those whom I am addressing have seen a thermometer rising under the influence of a few centigrams of a radium salt; but for those who pay due respect to the principles of thermodynamics, the mere fact that at any moment the gold leaves of the electroscope may be set in motion by a trace of radium, or, better still, the perpetual motion of Strutt's "radium clock," is all that is required as demonstration of the cease-

¹ Address of the president of the Geological Section of the British Association for the Advancement of Science, Dublin, 1908.

² See letters appearing in *Nature* of July 9 and September 24, 1903, from the late Mr. W. E. Wilson and Sir George Darwin referring to radium as a solar constituent and one from the writer (October 1, 1903) on its influence as a terrestrial constituent.